

What is claimed is:

1. A tire information transmission method comprising the steps of:

mounting sensor devices, each comprising a sensor for detecting tire information, at a plurality of locations of the tire;

mounting in the tire a base station for communication with the car body side which is connected to the sensor devices to collect tire information detected by the sensors; and

transmitting the collected tire information from the base station to the car body side.

2. The tire information transmission method according to claim 1, wherein the sensor devices are each provided with a communication device capable of communicating only with the base station to construct an intra-tire network with the communication devices of the sensor devices and the base station.

3. The tire information transmission method according to claim 2, wherein a protocol different from a protocol used for communication between the base station and the car body side is used for communication between the base station and the communication devices.

4. The tire information transmission method

according to claim 1, wherein the sensor devices are driven by a radio wave transmitted from the car body side.

5. A tire sensor device comprising:

a plurality of sensor devices, each comprising a sensor for detecting the condition of a tire, installed at predetermined locations of the tire; and

a base station, connected to the sensor devices, for processing signals indicative of the conditions of the tire detected by the sensors and transmitting the processed signals to the car body side.

6. The tire sensor device according to claim 5, wherein the sensor devices are each provided with a communication device capable of communicating only with the base station.

7. The tire sensor device according to claim 6, wherein the communication device of each sensor is provided with means of receiving a radio wave transmitted from the base station to generate power voltage for driving the sensor.

8. The tire sensor device according to claim 6, wherein the base station is provided with the function of controlling the sensors synchronously to measure a

plurality of tire information data.

9. The tire sensor device according to claim 5, wherein the sensor devices are each provided with power regenerating means for receiving a radio wave transmitted from the car body side to generate power voltage for driving the sensors.

10. The tire sensor device according to claim 9, wherein the sensor devices are each provided with a transmitter for transmitting tire information signals detected by the sensors to the base station.

11. The tire sensor device according to claim 5, wherein the base station is provided with storage means for storing the tire information signals.

12. The tire sensor device according to claim 11, wherein the base station is provided with means of processing data on tire information stored in the storage means into data based on the communication specifications of a vehicle equipped with the device so as to transmit the processed data to the car body side.

13. The tire sensor device according to claim 5, wherein the base station is provided with power

regenerating means for receiving a radio wave transmitted from the car body side to generate power voltage.

14. The tire sensor device according to claim 5, wherein a predetermined sensor device is provided with means of storing power and means of detecting the rotation angle of the sensor of the sensor device to detect the condition of the tire at a predetermined rotation position.

15. The tire sensor device according to claim 5, wherein a predetermined sensor device is provided with means of storing power, the base station is provided with means of detecting the rotation angle of the sensor of the sensor device, and a tire condition detection timing signal for the sensor is supplied to the sensor device from the base station to detect the condition of the tire at a predetermined rotation position.

16. The tire sensor device according to claim 5, wherein a sensor device having no sensor is mounted so that detected tire information can be added.

17. The tire sensor device according to claim 6 or 10, wherein the communication device or the transmitter is arranged away from the tire.

18. The tire sensor device according to claim 6 or 10, wherein the base station is mounted to a tire rim portion or a valve device installed on the wheel, and the communication devices or transmitters of the sensors are mounted to the tire through a base-isolated device.